

**CLAIMS:**

1. A method for making an OLED device, comprising:
  - a) providing a substrate having one or more test regions and  
5 one or more device regions;
  - b) moving the substrate into a least one deposition chamber  
for deposition of at least one organic layer;
  - c) depositing the at least one organic layer through a  
shadowmask selectively onto the at least one device region and at least one test  
10 region on the substrate;
  - d) measuring a property of the at least one organic layer in the  
at least one test region; and
  - e) adjusting the deposition process in accordance with the  
measured property.
- 15 2. The method according to claim 1 further including:
  - i) providing a mask structure having a plurality of  
openings which respectively correspond to the at least one device region and  
arranged to permit the deposition of organic material on the substrate; and
  - 20 ii) forming at least one test opening spaced from the  
plurality of openings for permitting the deposition of organic material onto a test  
region of the substrate.
3. The method according to claim 1 where the depositing and  
25 measuring occur under a vacuum pressure.
4. The method according to claim 3 where the pressure of the  
vacuum is less than 0.1 Pa.
- 30 5. The method according to claim 3 where the pressure of the  
vacuum is less than 0.001 Pa.

6. The method according to claim 1 wherein the measuring occurs in the at least one deposition chamber.

7. The method according to claim 1 wherein the properties include target thickness and the adjusting step adjusts the deposition towards such target thickness.

8. The method according to claim 1 wherein the properties include dopant concentration, chemical composition, or optical properties or combinations thereof.

9. The method according to claim 1 further including the step of moving the substrate from the at least one deposition chamber into a measurement chamber where the property is measured.

10. The method according to claim 1 where the substrates are kept at a vacuum pressure from the depositing of the at least one organic layer until at least the measuring of the at least one organic layer.

11. A method for making an OLED device, comprising:

- a) providing a substrate having one or more test regions and one or more device regions;
- b) moving the substrate sequentially into a least two deposition chambers for deposition of at least one organic layer in each deposition chamber;
- c) depositing the at least one organic layer in each chamber through a shadowmask selected for each deposition chamber onto the one or more device regions and one or more test regions on the substrate;
- d) measuring a property of the at least one organic layer in the at least one test region; and
- e) adjusting the deposition process in accordance with the measured property.

12. The method according to claim 11 wherein each deposition chamber corresponds to at least one test region which is different than the test region of the other deposition chamber(s).

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13. The method according to claim 11 wherein measurement of the properties for each test region is done after all test regions are deposited or after each test region is deposited.

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14. The method according to claim 11 where the substrate is kept at a reduced vacuum pressure during deposition and measurement.

15. The method according to claim 14 where the pressure of the vacuum is less than 0.1 Pa.

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16. The method according to claim 14 where the pressure of the vacuum is less than 0.001 Pa.

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17. The method according to claim 11 further including:  
i) providing a shadowmask structure for each chamber having a plurality of openings which respectively correspond to different device regions and arranged to permit the deposition of organic material on the substrate of such devices; and

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ii) forming at least one test opening spaced from the plurality of openings for permitting the deposition of organic material onto a test region of the substrate.

18. A shadowmask for use in making an OLED device on a substrate, comprising:

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a) a shadowmask structure having a plurality of openings which respectively correspond to different devices and arranged to permit the deposition of organic material on the substrate; and

b) at least one test opening spaced from the plurality of openings for permitting the deposition of organic material onto a test region of the substrate.